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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/828,667

04/21/2004

Roxanne Vu

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01/26/2006

DENIRO/RAMBUS

685 MARKET STREET, SUITE 540  
SAN FRANCISCO, CA 94105

EXAMINER

COX, CASSANDRA F

ART UNIT

PAPER NUMBER

2816

DATE MAILED: 01/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/828,667

Applicant(s)

VU ET AL.

Examiner

Cassandra Cox

Art Unit

2816

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) 3 and 33 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14-30 is/are allowed.
- 6) ☒ Claim(s) 1, 4, 11-13, 31, 32, 37 and 38 is/are rejected.
- 7) ☒ Claim(s) 2, 5-10 and 34-36 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 4, 31-32, and 38 are rejected under 35 U.S.C. 102(e) as being anticipated by Wurzer (U.S. Patent No. 6,954,091).

In reference to claim 1 Wurzer discloses in Figure 1 a phase locked loop circuit comprising: a phase-frequency detector (22) to provide a phase difference signal in response to an input signal (12) and a feedback signal (14); a charge pump (24) coupled to the phase frequency detector, to provide a first voltage (36) in response to the phase difference signal; a filter (26), coupled to the charge-pump, to provide a second voltage (40) in response to the first voltage (36); a first voltage-controlled oscillator (part of circuit 28; see column 2, lines 1-6, wherein Wurzer discloses that the circuit 28 comprises a plurality of VCOs), coupled to the filter (26), to provide the feedback signal in response to the second voltage (40); and a second voltage-controlled oscillator (28; see column 2, lines 1-6, wherein Wurzer discloses that the circuit 28 comprises a plurality of VCOs), coupled to the filter (26), to provide the feedback signal in response to the second voltage (40), wherein the charge-pump (24) includes a gain

Art Unit: 2816

that is adjustable in response to a control signal (PSEL). The same applies to claims 31-32, 37 (wherein the first control signal is PSEL, the second control signal is RSEL, and the third control signal is NPD, see Figures 3A-3C), and 38 (wherein the means is seen to be the charge pump).

In reference to claim 4, Wurzer discloses in column 4, lines 15-21 that the adjustable gain corresponds to a current that is adjustable.

In reference to claim 11, the filter (26) is considered to be a low-pass filter.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wurzer (U.S. Patent No. 6,954,091) in view of Agrawal et al. (U.S. Patent No. 6,650,141).

In reference to claim 12 Wurzer discloses all the limitations of the claim with respect to claim 1 (as mentioned above), except Wurzer does not disclose that the phase locked loop circuit is coupled to a serializer circuit and a deserializer circuit. Agrawal discloses in Figure 9 a phase locked loop circuit (190) coupled to a serializer circuit (186) and a deserializer circuit (184). It would have been obvious to one skilled in the art at the time of the invention that the phase locked loop of Wurzer could be used in the circuit of Agrawal (since Agrawal does not disclose a particular PLL design)

for the advantage of providing an improved PLL capable of realizing high-speed pulling even if the frequency variable-range of that PLL is expanded (see column 1, lines 65-68).

In reference to claim 13, the circuit of Agrawal is seen to be included in a memory device.

***Allowable Subject Matter***

5. Claims 14-30 are allowed.

6. Claims 2, 5-10, and 34-36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: Claims 2, 6, and 35 would be allowable because the closest prior art of record fails to disclose a circuit as shown in Figure 3 wherein the multiplexer (307) is responsive to the control signal (FreqSel), which is the same control signal that adjusts the gain of the charge pump in combination with the rest of the limitations of the base claims and any intervening claims. Claims 5 and 34 would be allowable because the closest prior art of record fails to disclose a circuit as shown in Figure 2 wherein the filter (203) includes an adjustable resistor responsive to the control signal (FreqSel), which is the same control signal for controlling the gain of the charge pump, in combination with the rest of the limitations of the base claims and any intervening claims. Claims 7-8 and 36 would be allowable because the closest prior art of record fails to disclose a circuit as shown in Figure 2 wherein the circuit further comprises a voltage regulator (204)

coupled to the filter (203) and the first (205) and second (206) voltage-controlled oscillators in combination with the rest of the limitations of the base claims and any intervening claims. Claim 9 would be allowable because the closest prior art of record fails to disclose a circuit as shown in Figure 2 wherein the circuit further comprises a phase mixer (207) coupled to the first (205) and second (206) voltage-controlled oscillators in combination with the rest of the limitations of the base claims and any intervening claims. Claim 10 would be allowable because the closest prior art of record fails to disclose a circuit as shown in Figure 2 wherein the circuit further comprises a clock buffer (207) coupled to the first (205) and second (206) voltage-controlled oscillators in combination with the rest of the limitations of the base claims and any intervening claims.

8. The following is an examiner's statement of reasons for allowance: Claims 14-22 are allowed because the closest prior art of record fails to disclose a circuit as shown in Figure 3 wherein the circuit also comprises an amplifier (204), coupled to the filter (203) and a multiplexer (301) coupled to the amplifier (204) in combination with the rest of the limitations of the base claims and any intervening claims. Claims 23-30 are allowed because the closest prior art of record fails to disclose a circuit as shown in Figure 4 wherein the circuit includes a first amplifier (401) and a second amplifier (402) in combination with the rest of the limitations of the base claims and any intervening claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

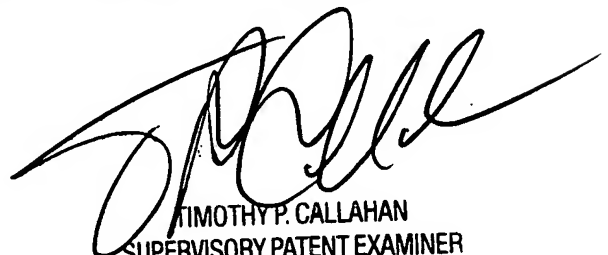
9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cassandra Cox whose telephone number is 571-272-1741. The examiner can normally be reached on Monday-Thursday from 7:00 AM to 4:30 PM and on alternate Fridays from 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CC  
OC  
January 17, 2006

  
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SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800